

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12. Canceled.

13. (currently amended) A method for identifying a compound useful in the treatment of a human neutral sphingomyelinase related disorder, comprising
 binding a human neutral sphingomyelinase cleavage target to a solid support, contacting the solid support with a candidate pharmacological agent and a recombinant human neutral sphingomyelinase having an amino acid sequence of represented by SEQ ID NO. 2 or fragment thereof, and the method further comprising
 analyzing the mixture of the candidate pharmacological agent, human neutral sphingomyelinase or the fragment, and the cleavage target, ~~wherein the analyzing step further comprises and comparing enzyme sphingomyelinase activity in the presence and absence of the pharmacological agent,~~
 wherein the fragment has at least about 50% of the activity and is at least 70% identical to of the protein of SEQ ID No. 2, and wherein the candidate pharmacological agent modulates the activity of the sphingomyelinase, and is at least about 70% identical to the protein of SEQ ID NO: 2.

14. (cancelled) ~~The method of claim 13 wherein the human neutral sphingomyelinase has a sequence represented by SEQ ID NO:2.~~

15. (currently amended) The method of claim 13 further comprising ~~wherein~~

1) ~~a mixture is formed of~~

i) ~~the human neutral sphingomyelinase cleavage target,~~

ii) ~~the human neutral sphingomyelinase or fragment thereof, and~~

iii) ~~a candidate pharmacological agent;~~

2) ~~the mixture is treated under conditions whereby, but for the presence of the candidate agent, the human neutral sphingomyelinase or fragment thereof cleaves the cleavage target to yield the cleavage product; and~~

3) ~~detecting the presence of the cleavage product is detected,~~ wherein a reduced concentration of the cleavage product relative to a control mixture that does not contain the candidate agent identifies the candidate agent as a compound

potentially useful in the diagnosis or treatment of a human neutral sphingomyelinase related disorder.

16. (Original) The method of claim 15 wherein the human neutral sphingomyelinase cleavage target is sphingomyelin.

17. (Previously presented) The method of claim 15 wherein the human neutral sphingomyelinase cleavage product is ceramide.

Claims 18-31. (Canceled).

32. (Previously presented) The method of claim 13, wherein the fragment of the recombinant human neutral sphingomyelinase is at least about 30 amino acids in length.

33. (Previously presented) The method of claim 32, wherein the fragment of the recombinant human neutral sphingomyelinase is at least about 50 or 70 amino acids in length.

34. (Currently amended) A method for identifying a compound useful in the treatment of a human neutral sphingomyelinase related disorder, comprising:

contacting a candidate pharmacological agent with a recombinant human neutral sphingomyelinase having an amino acid sequence of ~~represented by~~ SEQ ID NO. 2, and a human neutral sphingomyelinase cleavage target bound to a solid support, and ~~analyzing the mixture of the candidate agent and human neutral sphingomyelinase, wherein the analyzing step further comprises comparing enzyme~~ recombinant human neutral sphingomyelinase activity in the presence and absence of the agent.

35. (Previously presented) The method of claim 34 wherein,

1) a mixture is formed of

- i) the human neutral sphingomyelinase cleavage target,
- ii) the human neutral sphingomyelinase, and
- iii) the candidate pharmacological agent;

2) the mixture is treated under conditions whereby, but for the presence of the candidate agent, the human neutral sphingomyelinase cleaves the cleavage target to yield the cleavage product; and

3) the presence of the cleavage product is detected, wherein a reduced concentration of the cleavage product relative to a control mixture that does not contain the candidate agent identifies the candidate agent as a compound potentially useful in the treatment of a human neutral sphingomyelinase related disorder.

36. (Previously presented) The method of claim 35 wherein the human neutral sphingomyelinase cleavage target is sphingomyelin.

37. (Previously presented) The method of claim 36, wherein the human neutral sphingomyelinase cleavage product is ceramide.